WHAT IS CLAIMED IS:

1. (canceled)
2. (canceled)
3. (canceled)
4. (canceled)
5. (canceled)
6. (canceled)
7. (canceled)
8. (canceled)
9. (canceled)
10. (canceled)
11. (canceled)
12. (canceled)
13. (canceled)
14. (canceled)
15. (canceled)

16. (Currently Added):   A database reorganization system, comprising:

data records for holding data entries, each data record contain a primary key;

primary blocks for storing data records in the order of the primary keys thereof;

overflow blocks linked to the primary blocks;

a current location table and a new location table for containing in contiguous regions entries describing the addresses of the primary blocks;

a reorganization pointer for current location table;

a final pointer for the current location table; and

a reorganization pointer for the new location table.

17. (Currently Added):   The database reorganization system of claim 16, wherein

the database recognition system is configured to sequentially write

entries in the current location table to the new location table and, where any overflow block is present, to delink said overflow blocks, creating new entries corresponding to the primary blocks and adding the new entries to the new location table.

18. (Currently Added):   The database reorganization system of claim 16, further comprising:

a first means for, upon receipt of a database reorganization command, creating a new location table in addition to the current location table; and

a second means for sequentially writing entries in the current location table to the new location table and, when an overflow blocks linked to a primary block is detected, delinking that overflow blocks, adding new entries to the new location table, and rendering the overflow blocks as new primary blocks.

19. (Currently Added):   The database reorganization system of claim 16, further comprising:

means for shifting fore and aft records in primary blocks and eliminating fragmentation when a storage rate in primary blocks falls outside a range of predetermined values; and

means for sequentially writing entries in the current location table to the new location table.

20. (Currently Added):   The database reorganization system of claim 16, further comprising:

means for sequentially writing entries in the current location table to the new location table and maintaining in the primary blocks the initial storage rates used in the primary blocks.

21. (Currently Added): The database reorganization system of claim 16, further comprising:

a comparative means for, when retrieving a record by the primary key during reorganization, comparing the value of the target primary key with the value of the primary key of the record contained in the primary block and the overflow

out 19

blocks of the entry indicated by at least one of the reorganization pointers; and

a retrieval means for using the current location table to retrieve the target record when the value of the target primary key is found by the comparative means to be greater than or equal to the value of the primary key of the record stored in the blocks indicated by at least one of said reorganization pointers and for using the new location table to retrieve the target record when it is found to be less than the value of the primary key.

22. (Currently Added): A database reorganization system, comprising:

data records for holding data containing primary keys and alternate keys;

alternate-key entries that hold data entries, each alternate-key entry comprises an alternate key and a primary key;

alternate-key blocks for containing the alternate-key entries;

alternate-key overflow blocks linked to the alternate-key blocks;

a current alternate-key location table and new alternate-key location tables for containing alternate-key location table entries in contiguous regions;

a reorganization pointer for current alternate-key location table which indicates a progress of recognition of the alternate-key location table and alternate-key blocks for the current alternate-key location tables;

a final pointer which indicates a final point of the most currently used entry of the alternate-key location table for the current alternate-key location tables; and

a reorganization pointer for the new alternate-key location table.

23. (Currently Added) The database reorganization system of claim 22, further comprising:

means for sequentially writing entries in current alternate-key location tables to a new alternate-key location table and, where an alternate-key overflow blocks exists, delinking the alternate-key overflow blocks, creating new alternate-key location table entries corresponding to the alternate-key blocks and adding new alternate-key location table entries to a new alternate-key location table.

art'9

24. (Currently Added):   The database reorganization system of claim 22, further comprising:

a first means for, upon receipt of a database reorganization command, creating a new alternate-key location table in addition to the current alternate-key location tables; and

a second means for sequentially writing entries in the current alternate-key location table to the new alternate-key location table and, when alternate-key overflow block linked to   alternate-key block is detected, delinking that alternate-key overflow block, adding new alternate-key location table entries to new alternate-key location table and rendering these as new alternate-key blocks.

25. (Currently Added):   The database reorganization system of claim 22, further comprising:

means for shifting fore and aft records in the alternate-key blocks and eliminating fragmentation when the storage rate in the alternate-key blocks falls outside a range of the specified values; and

means for sequentially writing entries in the current alternate-key location table to new alternate-key location table.

26. (Currently Added):   The database reorganization systems of claims 22, 23 or 24, further comprising:

a comparative means for, when retrieving a record by the alternate key during reorganization, comparing the value of the target alternate key with the value of the alternate key of the record contained in the alternate-key block of the entry indicated by at least one of said reorganization pointer; and

a retrieval means for using the current alternate-key location table to retrieve the target record when the value of the target alternate key is found by the comparative means to be greater than or equal to the value of the alternate key of the record stored in the alternate-key blocks indicated by at least one of the reorganization pointer and for using the new alternate-key location table to retrieve the target record when it is found to be less than the value of that

alternate key.

27. (Currently Added):   A database system, comprising:

data records for holding data entries, each date record may contain primary keys and zero or one or more alternate key;

primary blocks for storing data records in the order of the primary keys thereof;

alternate-key entries that holds data entries, each alternate key entries comprises an alternate key and a primary keys;

alternate-key blocks for containing the alternate-key entries;

a current alternate-key location table for containing alternate-key location table entries in contiguous regions; and

means for storage of the alternate-key entries in the alternate-key blocks in the order of their alternate keys and, when no further entries may be stored in the alternate-key block, linkage of a new alternate-key overflow block to that alternate-key block and storage in that alternate-key overflow block of alternate-key entries that cannot be stored in the alternate-key block.

28. (Currently Added): The database reorganization system of claim 16, further comprising:

means for shifting fore and aft records in primary blocks and eliminating fragmentation when the storage rate in primary blocks falls outside a range of specified values;

contiguous regions joined for storage of the addresses of unused blocks resulting from the elimination of fragmentation; and

pointers which indicates the start points and end points of those contiguous regions.

29. (Currently Amended):   A database reorganization system, comprising:

data records for holding data entries, each data record contains a primary key;

primary blocks for storing data records in the order of the primary keys thereof;

Art 19

overflow blocks linked to the primary blocks;

a current location table for containing in a contiguous region entries describing the addresses of the primary blocks;

a first means for, upon receipt of a database reorganization command, creating a new location table in addition to the current location table; and

a second means for sequentially writing entries in the current location table to the new location table and, when an overflow block is detected, delinking that overflow block, adding new entries to the new location table and rendering these as new primary blocks in the new location table; and

a third means for writing current database blocks as primary blocks in the new location table.

30. (Currently Added):   A database reorganization system, comprising:

data records for holding data entries, each data record may contain a primary key;

primary blocks for storing data records in the order of the primary key thereof;

a first means, in a backup database reorganization system having a current location table containing in a contiguous region entries describing the addresses of the primary blocks, for creating, upon receipt of a database reorganization command, a new location table in addition to the current location table; and

a second means, in that backup database reorganization system, for sequentially writing primary block entries in the current location table to the new location table and, when an overflow block linked to a primary block is detected, delinking the overflow block, adding new entries to the new location table and rendering these as new primary blocks.

Art 19